CLAIMS

What we claim is:

1. An epoxy resin composition comprising an epoxy resin (A), a phenolic resin (B), an inorganic filler (C) and a curing accelerator (D), wherein a flexural modulus E (kgf/mm^2) at 240 ± 20°C of a cured article obtained by curing the composition is a value satisfying $0.015W + 4.1 \leq E \leq 0.27W + 21.8$ in the case of $30 \leq W < 60$, or a value satisfying $0.30W - 13 \leq E \leq 3.7W - 184$ in the case of $60 \leq W \leq 95$ wherein W (wt%) is a content of the inorganic filler (C) in the cured article, and the cured article forms a foamed layer during thermal decomposition or at ignition to exert flame retardancy.

2. The epoxy resin composition according to Claim 1 wherein an aromatic moiety and/or a polyaromatic moiety is included in a crosslinked structure of the cured article.

3. The epoxy resin composition according to Claim 2 wherein the aromatic moiety and/or the polyaromatic moiety selected from the group consisting of phenyl derivatives and biphenyl derivatives is included in the crosslinked structure of the cured article.

4. An epoxy resin composition comprising an epoxy resin (A), a phenolic resin (B), an inorganic filler (C) and a curing accelerator (D), wherein a content of the inorganic filler (C) in a cured article obtained by curing the composition is represented by W (wt%), and values of Q_1 and Q_2 represented by

the following equations satisfy $Q_1 \geq 5$ and $5 \leq Q_2 \leq 50$, respectively,

$$Q_1 \text{ (wt\%)} = (q_1/q_3) \times 100$$

$$Q_2 \text{ (wt\%)} = \{(100 - q_1 - q_2)/q_3\} \times 100$$

wherein q_1 (wt%) is a weight ratio, to the cured article, of carbon monoxide and carbon dioxide generated by placing a heat-resistant container including the weighed cured article in a tubular furnace purged with an inert gas at a constant flow rate to bring the atmosphere in the furnace into an inert state, and then thermally decomposing the cured article at 700 ± 10°C for 10 minutes; q_2 (wt%) is a weight ratio, to the cured article, of a residue at the completion of the thermal decomposition, i.e., the inorganic filler and remains carbonaized which are not thermally decomposed among the resin components [components other than the inorganic filler (C)] in the cured article; and q_3 (wt%) is a weight ratio of the resin components contained in the cured article to the cured article, and the cured article forms a foamed layer during thermal decomposition or at ignition to exert flame retardancy.

5. The epoxy resin composition according to Claim 4 wherein an aromatic moiety and/or a polyaromatic moiety is included in a crosslinked structure of the cured article.

6. The epoxy resin composition according to Claim 5 wherein the aromatic moiety and/or the polyaromatic moiety selected from the group consisting of phenyl derivatives and

biphenyl derivatives is included in the crosslinked structure of the cured article.

7. An epoxy resin composition comprising an epoxy resin (A), a phenolic resin (B), an inorganic filler (C) and a curing accelerator (D), wherein a flexural modulus E (kgf/mm^2) at 240 ± 20°C of a cured article obtained by curing the composition is a value satisfying $0.015W + 4.1 \leq E \leq 0.27W + 21.8$ in the case of $30 \leq W < 60$, or a value satisfying $0.30W - 13 \leq E \leq 3.7W - 184$ in the case of $60 \leq W \leq 95$ wherein W (wt%) is a content of the inorganic filler (C) in the cured article; and values of Q_1 and Q_2 represented by the following equations satisfy $Q_1 \geq 5$ and $5 \leq Q_2 \leq 50$, respectively,

$$Q_1 \text{ (wt\%)} = (q_1/q_3) \times 100$$

$$Q_2 \text{ (wt\%)} = \{(100 - q_1 - q_2)/q_3\} \times 100$$

wherein q_1 (wt%) is a weight ratio, to the cured article, of carbon monoxide and carbon dioxide generated by placing a heat-resistant container including the weighed cured article in a tubular furnace purged with an inert gas at a constant flow rate to bring the atmosphere in the furnace into an inert state, and then thermally decomposing the cured article at 700 ± 10°C for 10 minutes; q_2 (wt%) is a weight ratio, to the cured article, of a residue at the completion of the thermal decomposition, i.e., the inorganic filler and remains carbonized which are not thermally decomposed among the resin components [components other than the inorganic filler (C)] in the cured article; and

q_3 (wt%) is a weight ratio of the resin components contained in the cured article to the cured article, and the cured article forms a foamed layer during thermal decomposition or at ignition to exert flame retardancy.

8. The epoxy resin composition according to Claim 7 wherein an aromatic moiety and/or a polyaromatic moiety is included in a crosslinked structure of the cured article.

9. The epoxy resin composition according to Claim 8 wherein the aromatic moiety and/or the polyaromatic moiety selected from the group consisting of phenyl derivatives and biphenyl derivatives is included in the crosslinked structure of the cured article.

10. An epoxy resin composition comprising an epoxy resin (A), a phenolic resin (B), an inorganic filler (C) and a curing accelerator (D), wherein a cured article obtained by curing the composition forms a foamed layer during thermal decomposition or at ignition to exert flame retardancy.

11. The epoxy resin composition according to Claim 10 wherein an aromatic moiety and/or a polyaromatic moiety is included in a crosslinked structure of the cured article.

12. The epoxy resin composition according to Claim 11 wherein the aromatic moiety and/or the polyaromatic moiety selected from the group consisting of phenyl derivatives and biphenyl derivatives is included in the crosslinked structure of the cured article.

13. A semiconductor device in which the epoxy resin composition described in any one of Claims 1 to 12 is used as a encapsulating resin.